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CHARLES J. BRAND, Chief

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# RELATION BETWEEN PRIMARY MARKET PRICES AND QUALITIES OF COTTON.

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## INTRODUCTION.

Producers of cotton have claimed for years that certain markets have discriminated against their product and that frequently within the same market intrinsic worth was disregarded and cotton was purchased on averages, all grades bringing the same price. That such a system works to the detriment of the farmer who exercises care in producing and harvesting his crop is generally admitted. To discover, if possible, whether there was any foundation for such reports the Department of Agriculture in 1912–13 conducted a survey of Oklahoma [1] to secure accurate information as to the exact conditions under which the farmer of the western belt marketed his cotton.

So many interesting and unusual conditions were revealed by this survey that the Office of Markets and Rural Organization started an investigation in the season of 1913–14 to cover the entire cotton belt, for the purpose of ascertaining the manner in which cotton is handled

NOTE.—The survey here described, which should be of interest to all who are connected with the cotton industry, was supervised by Fred Taylor, Cotton Technologist; and the grading and stapling was done by D. C. Griffith, Investigator in Cotton Marketing; J. G. Martin, Investigator in Cotton Marketing; and R. W. Murray, formerly Assistant in Cotton Marketing. The period covered by this study was prior to the date when the cotton futures act became effective.

[1] Sherman, W. A., Taylor, Fred, and Brand, Charles J. Studies of Primary Cotton Market Conditions in Oklahoma, U. S. Department of Agriculture, Bulletin No. 36, 1913.

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and marketed in the various sections of the South. Seventy-three towns in North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Arkansas, Oklahoma, and Texas, for the most part sections growing cotton of short staple, were covered by this survey. Every effort was made to discover the facts as they existed in the various marketing centers, as a basis for improvement, since little improvement is possible without a full understanding of the exact conditions under which cotton is marketed. Special attention was given to grade, to see if (and to what extent) cotton was purchased according to the accepted standards and differences existing at that time or whether it was bought on a daily average price. Special effort was made to determine whether staple was a factor in pricing the farmer's cotton or whether cotton was sold without regard to variations in length of staple. Comparisons were made between prices paid for cotton of the same grade and staple on the same day in different markets. In the course of the investigation 38,000 representative samples were secured from 73 markets in 9 different States.

## METHOD OF INVESTIGATION.

Men who were experienced in the cotton business were appointed in the various markets covered by this survey. They were instructed to begin sampling as soon as cotton began to move freely and to send in 50 samples each week. Information as to the date of sale, name of seller, and price received accompanied each sample. These samples were carefully wrapped, placed in a mail bag, and shipped to Washington. The grading and stapling was done by cotton experts connected with the Office of Markets and Rural Organization. The same experts handled the entire lot of samples, thus securing a certain uniformity in the classing. When the classing was finished, the results were compiled and entered in the files of the Office of Markets and Rural Organization.

## AVERAGE PRICES OF COTTON BY MONTHS FOR THE STATES COVERED IN THE SURVEY.

In order to compare prices paid for cotton throughout the Cotton Belt, the average price for each grade was obtained by months for each State. This was done by taking all of the samples from the grades Strict Good Ordinary, Low Middling, Strict Low Middling, Middling, Strict Middling, Good Middling, and Strict Good Middling, as practically all of the crop fell within these grades. By making this selection for each State, it is safe to assume that the figures fairly represent the average for the season.

TABLE 1.—*Average prices of cotton for each State, by months, for the same grade and staple.*

| State. | Strict Good Ordinary. | Low Middling. | Strict Low Middling. | Middling. | Strict Middling. | Good Middling. | Strict Good Middling. |
|---|---|---|---|---|---|---|---|
| *October.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| Mississippi | 13.05 | 12.99 | 13.33 | 13.39 | 13.30 | 13.36 | 13.32 |
| Arkansas | 12.00 | 12.38 | 12.67 | 13.05 | 13.20 | 13.66 | 15.08 |
| Louisiana | 11.92 | 12.18 | 12.62 | 13.40 | 13.70 | 14.25 | 13.91 |
| Texas | 10.18 | 11.50 | 12.23 | 12.83 | 13.26 | 13.03 | 12.67 |
| Oklahoma | 11.31 | 12.06 | 12.52 | 12.91 | 13.14 | 13.21 | 13.36 |
| North Carolina | 12.99 | 13.00 | 13.15 | 13.24 | 13.57 | 13.54 | 13.50 |
| Georgia | 13.06 | 13.02 | 13.20 | 13.36 | 13.41 | 13.50 | 13.58 |
| South Carolina | 13.31 | 13.25 | 13.18 | 13.41 | ..... | 13.48 | 13.43 |
| Alabama | 13.51 | 13.34 | 13.19 | 13.32 | 13.39 | 13.42 | 13.47 |
| *November.* | | | | | | | |
| Mississippi | 11.56 | 12.07 | 12.26 | 12.36 | 12.57 | 12.80 | 12.70 |
| Arkansas | 11.21 | 11.73 | 11.83 | 12.17 | 12.87 | 13.22 | 13.40 |
| Louisiana | 10.91 | 10.86 | 11.21 | 11.76 | ..... | ..... | 12.78 |
| Texas | 9.88 | 10.48 | 10.88 | 11.35 | 12.04 | 12.01 | 12.17 |
| Oklahoma | 9.95 | 11.02 | 11.56 | 11.91 | 12.16 | 12.45 | 11.68 |
| North Carolina | 12.06 | 12.44 | 12.38 | 13.18 | 13.25 | 13.32 | 13.50 |
| Georgia | 12.31 | 12.41 | 12.86 | 13.14 | 13.27 | 13.39 | 13.43 |
| South Carolina | 12.42 | 12.85 | 12.97 | 13.16 | ..... | 13.29 | 13.41 |
| Alabama | 12.45 | 12.94 | 12.98 | 12.96 | 13.02 | 13.09 | 13.34 |
| *December.* | | | | | | | |
| Mississippi | 10.75 | ..... | 11.82 | 12.40 | 12.26 | 12.30 | 12.29 |
| Arkansas | 10.87 | 10.89 | 11.36 | 11.46 | 11.86 | 12.58 | 12.94 |
| Louisiana | 10.20 | 10.51 | 11.46 | 11.50 | 11.38 | 13.38 | 13.00 |
| Texas | 9.11 | 9.09 | 10.16 | 10.65 | 10.96 | 11.31 | ..... |
| Oklahoma | 9.40 | 9.75 | 11.00 | 10.76 | 10.80 | 12.63 | 12.00 |
| North Carolina | 10.90 | 11.13 | 12.00 | 13.25 | 12.13 | 13.15 | 13.13 |
| Georgia | 11.35 | 11.66 | 12.16 | 12.66 | 12.79 | 12.86 | 12.95 |
| South Carolina | 11.19 | 12.10 | 12.43 | 12.44 | ..... | 12.71 | 13.00 |
| Alabama | 11.59 | 12.02 | 12.14 | 12.35 | 12.46 | 12.54 | 12.49 |

A close study of Table 1 should prove of interest. In a general way this table indicates that the cotton was sold with some regard to grade, for, with a few variations, the price advanced with the grade up to Middling. But this was not true in all cases, for it will be seen that for October in Alabama Strict Good Ordinary cotton averaged 13.51 and Strict Good Middling 13.47. While the latter grade sold for 20 cents less per bale than the former, on basis of New Orleans differences, it was actually worth $7.50 per bale more. Again, Low Middling averaged 13.34, Strict Low Middling 13.19, and Middling 13.32; and in November Strict Low Middling averaged two points higher than Middling. During the same month in South Carolina Low Middling averaged 13.25 and Strict Low Middling 13.18. Strict Low Middling was actually worth at least 25 points, or $1.25 per bale, more than Low Middling. These variations are but a few of the many instances that might be cited, and tend to prove either that the higher grades are being priced too low or that the lower grades are bringing prices above their value, or that a combination of the two is true.

That the higher grades are not bringing their value is clearly shown by an examination of Table 1, for it will be seen that practically no grade above Middling commands a premium; but in the lower grades, Strict Good Ordinary to Middling, a gradual advance in price is

usually shown as the grade improves. This fact shows that the same condition exists over the entire belt that existed in Oklahoma in 1912; that is, the very existence of the higher grades is practically ignored. Probably nothing retards improvement in the methods of handling cotton more than this penalizing of the higher grades, for the thoughtful producer sees his product priced the same as that of his careless and indifferent neighbor, and naturally feels that there is no inducement to continue his painstaking work as long as such marketing conditions exist. In effect, it is placing a premium on the careless and indifferent farmer and penalizing the intelligent producer.

While Table 1 indicates that cotton from Strict Good Ordinary to Middling is sold on grade, it also shows that the differences as quoted on the various exchanges were disregarded. The New Orleans exchange quotations for the months of September, October, November, and December of 1913 indicate that the differences between each grade above Middling were about 25 points, or a quarter of a cent, and below Middling from a quarter to three-eighths of a cent. Table 1 will give an idea as to the range in prices over the entire belt.

The matter of freight rates must receive some consideration. While some towns, on account of water rates, enjoy certain advantages from a transportation viewpoint, the difference in rates between points is not a factor of great importance. While there may be a wide range in freight rates between Texas and Carolina points when shipment to some Carolina or eastern point is considered, the major portion of the western crop is exported and is not affected to any great extent by this difference in rates. It is well to consider that while the East has an advantage in freight rates to eastern destinations, the superiority of the staple of the western belt should more than overcome the advantages possessed by the East in transportation. However, in comparing prices it may be well to allow for an extreme variation of 50 points in order to absorb the possible difference in freight rates Any excess over this variation would indicate that the local market was out of line. Taking, for example, Low Middling December, the range in prices is from 9.09 per pound for Texas to 12.10 per pound for South Carolina, a range of 301 points. Allowing for a variation of 50 points it is still found that Texas for that month is 250 points out of line, or $12.50 per bale lower than South Carolina. While this instance shows the extreme range in price, many cases are recorded where differences existed between States ranging from 100 to 150 points during the same month. The widest variations usually are found between the eastern and western States.

It will be noted that the States have been divided into the eastern and western belt. Table 1 indicates that this division should be

made, as prices show clearly that there is a relationship between the States in these two sections. The western belt is almost uniformly lower in price than the eastern belt, while between Texas and Oklahoma, it is shown that the values are relatively the same. The factors that cause this difference in prices in the two sections are explained in part, as follows:

From these investigations, it appears that in the eastern belt the higher prices may be accounted for in three ways: First, and probably the most important cause, is proximity to cotton mills. Certain mills find it advantageous to control producing sections in their vicinity in so far as possible, thereby reducing competition. It is thus possible for them to pay higher prices because of low freight rates, as they see just what they are buying, and because they reduce the risk of loss in weight claims, delays, and the many other hazards incidental to buying from a distance. A second factor is probably the absence of most of the middlemen. A portion of the cotton purchased in the eastern belt, especially in the Carolinas, passes directly from the primary purchaser to the mill buyer, which enables the producer and consumer to secure profits that ordinarily are obtained by the intermediaries. A third probable reason is that in the eastern belt primary marketing conditions are superior, storage houses are more generally available, money rates are comparatively lower, and competition probably exists to a greater degree, than in the west. Then, too, the marketing of the cotton is in the hands of farmers who, through generations of training, know the approximate value of their crop, and, as a result, command a fair price for their product. If the price offered does not satisfy them they usually can store in a warehouse and, with the certificate issued, negotiate a loan, at a reasonable rate of interest, for such amounts as may be necessary to finance their business.

The results of this survey also show that in the western belt different conditions exist in the different primary markets. New sections have been developed and the virgin soil needs little fertilizer, which enables the farmer to produce cotton at a low cost except for his own labor. Low cost of production permits the underselling of the eastern sections where fertilizers add materially to the expense of raising cotton. It is a long haul to the mills, warehouses are very few, and banking rates as a rule are higher than in the eastern sections. Lack of proper facilities for housing and borrowing on the crop induce the farmer to market his crop as rapidly as it is gathered, for with no warehouse available it must be left exposed to the weather, and his experience has shown him that this is usually done at a heavy loss. Then, too, a portion of the crop is raised under the lien system, and the merchant or banker is rarely willing that the farmer should keep the cotton on the farm, as it is not safeguarded, is subject to

damage by exposure to weather conditions, and when stored in this way usually can not be utilized as a collateral for loans. For these reasons the merchant often insists that it be sold as rapidly as ginned. This rushing of cotton to the market naturally tends to depress it, and lower prices result.

### VARIATIONS IN THE PRICES OF MIDDLING COTTON IN THE SAME MARKET ON THE SAME DAY IN DIFFERENT STATES IN THE COTTON BELT.

In Table 2 is shown the range in prices between bales of Middling cotton sold in the same market on the same day. In many of these markets several hundred bales of cotton were sold in a single day, and it is doubtful that in any particular case data were secured upon both the highest and lowest prices paid, on any date in any market. Therefore it is safe to assume that the range in prices shown in Table 2 is less than that which actually occurred in many primary markets.

A glance at Table 2 shows that the widely varying prices are not confined to any section of the belt, but occur in each State where cotton is grown. This condition clearly indicates that a large amount of cotton is sacrificed at a price below its real value. The extreme variation shown in the table is in Oklahoma, with a sale on October 21 in Durant of $1\frac{1}{16}$ inch cotton at 13 cents and $1\frac{1}{8}$ inch at 10.05 cents. It is safe to assume that $1\frac{1}{8}$ inch cotton is worth at least half a cent more than $1\frac{1}{16}$ inch; so, assuming that the $1\frac{1}{16}$ inch cotton sold for its full value, on this basis the $1\frac{1}{8}$ inch cotton sold for at least $17.50 below its real value. A similar sale is recorded at Jewett, Tex., where on December 12 a bale of 1 inch cotton sold for 11 cents per pound and a bale of $1\frac{1}{8}$ inch staple sold for 9 cents, a difference of 200 points or $10 per bale. As $1\frac{1}{8}$ inch staple is worth approximately $5 per bale more than 1 inch, the total loss in this instance would approximate $15 per bale. A number of such sales are recorded in Table 2.

TABLE 2.—*Variations in the price of middling cotton in the same market, the same day, in different States in the cotton belt.*

| Market. | Date of sale. | Length of staple. | Price per pound. | Length of staple. | Price per pound. | Difference in points. | Difference per bale. |
|---|---|---|---|---|---|---|---|
| | | *Inches.* | *Cents.* | *Inches.* | *Cents.* | | |
| South Carolina: | | | | | | | |
| Chapin | Feb. 10, 1914 | $\frac{3}{4}$ | 13.00 | $1\frac{1}{16}$ | 12.00 | 100 | $5.00 |
| Alabama: | | | | | | | |
| Huntsville | Dec. 4, 1913 | 1 | 12.50 | $1\frac{1}{16}$ | 11.50 | 100 | 5.00 |
| Troy | Jan. 8, 1914 | 1 | 12.50 | $1\frac{1}{16}$ | 11.25 | 125 | 6.25 |
| Montgomery | Jan. 24, 1914 | $1\frac{1}{16}$ | 13.12 | $1\frac{1}{16}$ | 12.12 | 100 | 5.00 |
| North Carolina: | | | | | | | |
| Raleigh | Nov. 11, 1913 | $\frac{7}{8}$ | 13.38 | $\frac{7}{8}$ | 12.38 | 100 | 5.00 |
| Georgia: | | | | | | | |
| Dublin | Dec. 19, 1913 | 1 | 12.50 | $1\frac{1}{16}$ | 10.00 | 250 | 12.50 |
| Moultrie | Oct. 22, 1913 | $1\frac{1}{16}$ | 12.75 | $1\frac{1}{16}$ | 11.75 | 100 | 5.00 |
| Washington | Dec. 11, 1913 | 1 | 13.00 | 1 | 11.00 | 200 | 10.00 |
| Mississippi: | | | | | | | |
| Aberdeen | Nov. 25, 1913 | $1\frac{1}{16}$ | 13.00 | 1 | 12.50 | 50 | 2.50 |
| Corinth | Dec. 5, 1913 | $1\frac{1}{16}$ | 13.00 | 1 | 11.60 | 140 | 7.00 |
| Starkville | Nov. 28, 1913 | 1 | 12.75 | $1\frac{1}{16}$ | 10.10 | 265 | 13.25 |

TABLE 2.—*Variations in the price of middling cotton in the same market, the same day, in different States in the cotton belt*—Continued.

| Market. | Date of sale. | Length of staple. | Price per pound. | Length of staple. | Price per pound. | Difference in points. | Difference per bale. |
|---|---|---|---|---|---|---|---|
| Oklahoma: | | *Inches.* | *Cents.* | *Inches.* | *Cents.* | | |
| Altus | Nov. 1, 1913 | 1 | 12.50 | 1 | 11.00 | 150 | $7.50 |
| Atoka | Oct. 30, 1913 | 1 | 13.00 | 1 1/16 | 11.00 | 200 | 10.00 |
| Do | Nov. 13, 1913 | 1 | 13.00 | 1 1/16 | 11.25 | 175 | 8.75 |
| Boswell | Oct. 16, 1913 | 1 | 12.25 | 1 1/8 | 10.00 | 225 | 11.25 |
| Durant | Oct. 21, 1913 | 1 1/16 | 13.00 | 1 1/8 | 10.05 | 295 | 14.95 |
| Do | Sept. 30, 1913 | 1 1/16 | 13.85 | 1 1/8 | 11.30 | 255 | 12.75 |
| Erick | Oct. 24, 1913 | 1 | 13.38 | 1 | 11.00 | 238 | 11.90 |
| Do | Nov. 7, 1913 | 1 | 12.75 | 1 1/16 | 10.50 | 225 | 11.25 |
| Texas: | | | | | | | |
| Jewett | ....do..... | 1 | 12.50 | 1 | 10.00 | 250 | 12.50 |
| Do | Dec. 6, 1913 | 1 | 11.00 | 1 | 9.00 | 200 | 10.00 |
| Do | Dec. 12, 1913 | 1 | 11.00 | 1 1/8 | 9.00 | 200 | 10.00 |
| Longview | Nov. 30, 1913 | 1 | 14.50 | 1 | 12.10 | 240 | 12.00 |
| Do | Nov. 8, 1913 | 1 | 12.62 | 1 | 9.50 | 312 | 15.60 |
| Sweetwater | Nov. 20, 1913 | 1 | 11.50 | 1 | 10.55 | 95 | 4.75 |
| Taylor | Oct. 30, 1913 | 1 | 13.55 | 1 | 12.35 | 120 | 6.00 |
| Waco | Oct. 23, 1913 | 1 | 13.50 | 1 | 12.00 | 150 | 7.50 |
| Do | Jan. 9, 1914 | 1 | 8.50 | 1 | 7.25 | 125 | 6.25 |

Wide variations are shown in each State. In Raleigh, N. C., on November 11, one bale sold for 13.38 and another for 12.38, a difference of $5 per bale; Washington, Ga., shows a difference on December 4 of $5; Starkville, Miss., on November 28, $13.25; Dublin, Ga., on December 19, $12.50; Jewett, Tex., November 7, $12.50; Huntsville, Ala., December 4, $5; Chapin, S. C., February 10, $5; and Oklahoma points range from $5 to $14.95.

Care has been used to avoid including bales which were handled as part of round-lot sales. The wide ranges in prices would seem to indicate that in many instances the prices on a great many bales must have been seriously depressed for some reason which a careful examination of the available data failed to disclose.

When such variations in prices are shown by this investigation involving two or more bales of Middling grade in any market it is apparent that gross injustices may occur in many individual cases and in the aggregate assume enormous proportions. These variations show a condition that is unfair to the producer, for it is the farmer, ignorant of the value of his crop and knowing least about marketing his product, who as a rule is called upon to submit to such practices.

## "ROUND-LOT" SALES.

During the progress of this investigation information was secured on a large number of "round-lot" sales. These sales have been studied and comparisons have been made between "round-lot" sales and single-bale sales on the same day.

Practically every "round lot" came from the eastern belt, the west showing only a few, which were too small to be considered. These facts are rather typical of the two sections, as the west usually

sells in small lots as rapidly as ginned, while larger "round lots" are more common in the east.

The figures show a remarkably narrow range in prices in the eastern belt, indicating that "round lots" commanded the attention of the buyers and that competition was so keen that the producer secured the approximate value of his product. In North Carolina, South Carolina, Georgia, and Alabama on given dates the range in prices, when freight rates were considered, did not amount to as much as one-half cent per pound, and when the character of the cotton of the different sections was considered the various markets were shown to be operating on practically the same basis.

While it is difficult to make definite comparisons between "round-lot" and single-bale sales, still the figures in general clearly indicate the advantage of selling in "round lots." Although this survey did not afford opportunities for definite comparisons between "round-lot" and single-bale sales, figures of subsequent years are available. Investigations made by the United States Department of Agriculture in cooperation with the experiment station of the North Carolina Agricultural and Mechanical College in 1914–15 and 1915–16 furnish much light on the subject. During these two years data were obtained regarding 55,000 bales of cotton sold in North Carolina, and complete records were kept of each transaction. These figures show that in 1914–15 the producer received 29 points, or $1.45 more per bale by selling in lots of 10 bales or over, and the following year he received 17 points, or 85 cents more per bale.

These data also tend to show the importance of selling cotton in uniform lots of grade and staple. Since the selling in "round lots" showed a higher price, sales in even-running lots would show equal or even higher premiums.

### AVERAGE STAPLE LENGTHS AND AVERAGE PRICES FOR EACH LENGTH OF STAPLE FOR THE DIFFERENT STATES AND FOR THE ENTIRE BELT.

To the question of staple, little thought has been given by producers in short-staple sections, only the most progressive considering it of enough importance for them to devote time to the matter of general cultural improvement. The coming of the boll weevil and the resulting damage to sections producing long-staple cotton has given an impetus to the development of a longer staple in other sections, and through activities of the Federal Department of Agriculture and agencies within the States, considerable improvement has been made. Producers in some localities who a few years ago knew nothing of staple cotton are now devoting time and money to the development of a staple that is specially adapted to their particular locality. In this study attention was given to staple length to ascertain whether it was a factor in determining the price paid the producer for his

product. In considering this subject it must be remembered that this survey did not embrace the long-staple sections, and its results are not representative of conditions as they exist in those communities.

The average staple length, compiled from the 38,000 samples collected in the survey, was found to be between fifteen-sixteenths of an inch and 1 inch.

TABLE 3.—*Average price for each staple and average staple length* [1] *for each State.*

| State. | Average staple length. | Price per pound for staple of the following lengths: | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ¾ inch. | 13/16 inch. | ⅞ inch. | 15/16 inch. | 1 inch. | 1 1/16 inches. | 1⅛ inches. |
| | *Inches.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* | *Cents.* |
| Georgia | 0.955 | 12.89 | 13.11 | 12.94 | 13.01 | 13.09 | 13.14 | 13.09 |
| North Carolina | .915 | 11.70 | 12.35 | 12.86 | 13.19 | 12.58 | 13.30 | 13.17 |
| South Carolina | .93 | 12.59 | 12.52 | 11.70 | 12.89 | 13.11 | 13.27 | 11.53 |
| Texas | .98 | 11.33 | ..... | 11.28 | 11.05 | 11 19 | 10.87 | 10.94 |
| Oklahoma | L.02 | 10.50 | 11.50 | 10.59 | 11.29 | 11.73 | 11.21 | 12.75 |
| Louisiana | .98 | 11.12 | 9.94 | 11.05 | 11.41 | 11.83 | 11.90 | 12.87 |
| Arkansas | .95 | 11.63 | 11.93 | 11.82 | 12.05 | 12.06 | 11.87 | 12.57 |
| Mississippi | .98 | 12.03 | 13.13 | 12.94 | 12.93 | 13.01 | 13.13 | 13.31 |
| Alabama | .96 | 13.23 | 12.90 | 12.95 | 12.97 | 12.91 | 13.06 | 13.00 |
| Average price for belt | ..... | 12.73 | 12.28 | 12.28 | 12.76 | 12.58 | 12.12 | 12.76 |
| Total number of samples of each staple | ..... | 457 | 556 | 6,840 | 7,510 | 10,084 | 2,275 | 1,191 |

[1] These averages relate to white cotton only. However, the average length of staple for the colored cotton was practically the same.

Table 3 shows that length of staple often does not receive proper consideration in pricing the farmer's cotton. A careful study of Table 3 will show that the average price paid for cotton of ¾-inch staple was as high as that secured by the producer of 1-inch cotton, while the latter is worth probably $5 more per bale for spinning purposes. In this connection it might be well to quote from a recent issue of the Farmers' Market Bulletin, published by the North Carolina Agricultural Experiment Station in cooperation with the State Department of Agriculture and the College of Agriculture, April, 1916, edition.

The difference in mill value between different staples varies according to the demand and supply. In a section in which the producers know what staple they have, they are reported to receive 25 points more for 15/16-inch staple than ⅞-inch staple, which is the basis; 50 points more for 1-inch, 100 points more for 1 1/16, 250 points more for 1⅛, and 400 points more for 1 3/16-inch staple. According to these figures, a farmer in such a section of the country would receive $2.50 more for a 500-pound bale if it were 1-inch than he would if it had been ⅞-inch.

The injustice of the situation is emphasized when it is shown that ¾-inch staple frequently brings the same price as staple of 1 1/16 inch, and occasionally the same as staple of 1⅛ inch, when, according to the statement quoted above, 1⅛ inch is worth $17.50 more than ¾-inch staple. It might be suggested that the difference in favor of the ¾-inch cotton was caused by the fact that shorter staples usually

mature early, and that this early maturing may have resulted in a higher grade. However, during the first few months of the cotton season of 1913–14 the precipitation was unusually heavy, in some instances amounting to twice the normal. Presumably this was the reason that the cotton of $\frac{3}{4}$-inch staple was lowest in grade, running 32 points off Middling, while all of the staples from $\frac{15}{16}$ of an inch and longer ran a few points on Middling in value. These figures indicate that a large portion of the cotton crop is sold on averages, neither grade nor staple receiving proper consideration in many short-staple sections.

It generally is admitted that the majority of the buyers operating in sections which produce short-staple cotton have only a very limited knowledge of the various lengths of staple, as they have had practically no technical experience in stapling or "pulling" cotton. This is probably the principal reason why the present price conditions exist, but whatever the underlying cause, it can not be denied that under such a system of marketing the producer of better staple is not receiving a fair and just return for his product. It is manifestly unfair to the farmer who is producing a superior staple to have his cotton purchased at a price figured on the average cotton of a community, for naturally the average is low enough to protect the buyer from any possible loss. Under this system of marketing, it is often profitable for the producer to confine his efforts to the growing of the shorter lengths, for as a rule there is a correlation between length of staple and percentage of lint—usually the shorter the length of staple the higher the percentage of lint; therefore, at the same price per pound, the producer of the shorter staple would receive greater returns. Subsequent to this investigation campaigns have been conducted in many parts of the Cotton Belt with a view to teaching the producer the value of growing better staple and the need of greater care in handling his product, and the Office of Markets and Rural Organization has had frequent indications that those who are growing better staple are demanding and are often receiving the premiums to which their staple entitles them.

### MARKETING TINGED AND STAINED COTTON.

The rainfall during the months of September and October, 1913, in the Cotton Belt was unusually heavy, in some sections amounting to twice the normal. This unusual precipitation, at a time when the cotton had matured, resulted in a large quantity of tinged and stained cotton; about 25 per cent of the 38,000 samples collected could not be classed on the permissive white grades. A study of the prices received for colored cotton shows ranges out of proportion to the values involved. While it is probably true that the buyer purchases a great deal of this cotton at a time when it is difficult to find a market

for it and his profits should be proportionately larger, still the range in prices indicates that little regard was shown to price differences as they existed in the spot markets, and that many farmers disposed of their product at prices far below its value. Tinged and stained cotton usually has been sold on type rather than on description, which fact has worked to the disadvantage of the producer who had this kind of lint, for it meant that the buyer had to purchase this cotton, send a sample to his brokers, and then receive an offer based on the type submitted. It is apparent that in naming a price to the producer, the buyer would make it so low that little if any risk would be involved.

In Longview, Tex., on November 22, two bales of the same grade of cotton were sold—one bale of 1-inch staple bringing 9½ cents, and the other bale of 1 1/16-inch staple, bringing 4½ cents, a difference of 5 cents per pound, or $25 per bale. It is probable that the producer owning the first bale knew something of values, and that the one selling for the lower figure knew nothing of grade or staple. In Boswell, Okla., on November 11, two bales sold at a difference of 431 points, or $21.55 per bale. While these are the extreme variations between bales of the same grade in the same market, many instances of variations of over $10 per bale are shown. As between different markets in the belt even wider ranges could be shown. While the two cases cited occurred in the West, where the widest ranges were usually found, still a condition almost as bad was revealed in the East. In Chapin, S. C., two bales of the same grade sold on the same day with a difference of $13.50 per bale; El Dorado, Ark., $13.75; and Albertville, Ala., $10. As this survey shows that fully one-fourth of this crop was off-colored, some idea can be formed as to the losses which the producers probably sustained.

The fact that official standards for tinged and stained cotton have been promulgated[1] should enable the merchant to handle colored cotton in the future with little more risk than with white cotton. The decreased risk naturally will give greater stability to the market and should enable the farmer to secure prices which are more in line with the value of the product offered. Table 4 shows the wide range in prices paid in primary markets for tinged and stained cotton. It is but natural to expect a considerable range in prices, but there is no argument to justify a variation of 500 points in the same market on the same day for the same grade, especially when this difference amounts to more than was paid the producer for the lowest-priced bale.

It must not be supposed that the local buyer reaps the entire benefit of this loss, because he, too, is frequently not aware of the intrinsic worth of the cotton that he purchases. Probably this amount is absorbed gradually along the line, but the producer is the one who sustains the loss.

[1] Promulgated Jan. 28, 1916. See U. S. Dept. of Agriculture, Office of Markets and Rural Organization, Service and Regulatory Announcement No. 9, 1916.

TABLE 4.—*Variation in prices paid for tinged and stained cotton.*

| Market. | Date. | Grade. | Length of staple. | Price. | | Difference in points. | Difference per bale. |
|---|---|---|---|---|---|---|---|
| | | | | Highest. | Lowest. | | |
| *South Carolina.* | | | *Inches.* | *Cents.* | *Cents.* | | |
| Chapin | Dec. 15, 1913 | S. M. stained [1] | 1 | 11.50 | 10.00 | 150 | $7.50 |
| Do | Dec. 22, 1913 | S. M. tinged | 1 1/16 | 12.00 | 10.25 | 175 | 8.75 |
| Seneca | Dec. 25, 1913 | M. spotted | 1 | 11.62 | 10.50 | 112 | 5.60 |
| Do | Feb. 25, 1914 | M. tinged | 7/8 | 11.75 | 11.00 | 75 | 3.75 |
| St. Matthews | Sept. 24, 1913 | M. spotted | 7/8 | 12.06 | 10.00 | 206 | 10.30 |
| Do | Sept. 29, 1913 | M. tinged | 1 1/16 | 13.87 | 13.10 | 77 | 3.85 |
| Do | Jan. 10, 1914 | S. M. tinged | 1 1/16 | 12.08 | 10.02 | 206 | 10.30 |
| Chapin | Dec. 20, 1913 | .....do..... | 1 1/16 | 13.00 | 10.30 | 270 | 13.50 |
| *Louisiana.* | | | | | | | |
| Monroe | Dec. 11, 1913 | L. M. spotted | 1 | 12.00 | 10.00 | 200 | 10.00 |
| *Arkansas.* | | | | | | | |
| Searcy | Oct. 9, 1913 | S. L. M. spotted | 1 | 13.12 | 11.00 | 212 | 10.60 |
| El Dorado | Nov. 6, 1913 | L. M. stained | 7/8 | 12.75 | 10.00 | 275 | 13.75 |
| Camden | Nov. 20, 1913 | S. L. M. spotted | 7/8 | 12.25 | 11.00 | 125 | 6.25 |
| Fordyce | Oct. 6, 1913 | M. tinged | 1 1/16 | 13.00 | 11.30 | 170 | 8.50 |
| *Alabama.* | | | | | | | |
| Talladega | Jan. 23, 1914 | S. M. tinged | 1 1/16 | 12.75 | 12.25 | 50 | 2.50 |
| Albertville | Jan. 22, 1914 | S. L. M. tinged | 1 | 12.00 | 10.00 | 200 | 10.00 |
| Do | .....do..... | S. L. M. spotted | 1 1/16 | 12.50 | 11.00 | 150 | 7.50 |
| Eufaula | Nov. 20, 1913 | L. M. blue | 1 | 12.88 | 12.00 | 88 | 4.40 |
| Huntsville | Dec. 11, 1913 | M. tinged | 1 1/16 | 12.00 | 10.50 | 150 | 7.50 |
| *Oklahoma.* | | | | | | | |
| Atoka | Oct. 22, 1913 | S. M. off | 1 1/16 | 13.00 | 10.00 | 300 | 15.00 |
| Boswell | Oct. 16, 1913 | S. L. M. tinged | 1 1/8 | 12.50 | 10.35 | 215 | 10.75 |
| Do | Nov. 13, 1913 | L. M. off | 1 | 13.38 | 9.07 | 431 | 21.55 |
| Chattanooga | Nov. 14, 1913 | L. M. stained | 1 | 9.50 | 8.00 | 150 | 7.50 |
| Erick | Nov. 17, 1913 | M. tinged | 1 | 11.75 | 10.25 | 150 | 7.50 |
| *Georgia.* | | | | | | | |
| Hartwell | Jan. 13, 1914 | M. stained | 1 1/16, 1 1/16 | 12.50 | 10.50 | 300 | 10.00 |
| Sandersville | Jan. 19, 1914 | S. L. M. blue | 1 | 9.00 | 11.00 | 200 | 10.00 |
| Hoschton | Dec. 18, 1913 | S. M. tinged | 1 | 12.25 | 10.50 | 175 | 8.75 |
| Washington | Nov. 28, 1913 | .....do..... | 1 | 12.56 | 10.50 | 206 | 10.30 |
| Americus | Dec. 17, 1913 | M. blue | 7/8, 1 1/16 | 11.50 | 9.50 | 200 | 10.00 |
| Dublin | Dec. 5, 1913 | M. spotted | 1 1/16, 1 | 13.00 | 11.75 | 125 | 6.25 |
| Do | Jan. 30, 1914 | M. blue | 1 1/8 | 12.75 | 9.25 | 350 | 17.50 |
| Sandersville | Jan. 10, 1914 | S. M. off | 7/8, 1 1/16 | 12.00 | 9.75 | 225 | 11.25 |
| *Texas.* | | | | | | | |
| Longview | Oct. 9, 1913 | L. M. blue | 1 | 10.60 | 7.60 | 300 | 15.00 |
| Do | Oct. 23, 1913 | L. M. off | 1 | 11.50 | 8.50 | 350 | 17.50 |
| Do | Nov. 22, 1913 | S. G. O. stained | 1, 1 1/16 | 9.50 | 4.50 | 500 | 25.00 |
| Sweetwater | Jan. 15, 1914 | L. M. stained | 7/8, 1 1/16 | 10.00 | 6.30 | 370 | 18.50 |
| *Arkansas.* | | | | | | | |
| Batesville | Nov. 20, 1913 | M. tinged | 7/8, 1 | 12.70 | 11.75 | 95 | 4.75 |
| Camden | Nov. 20, 1913 | S. L. M. spotted | 7/8, 1 | 12.25 | 11.25 | 100 | 5.00 |
| El Dorado | Oct. 9, 1913 | S. L. M. off | 7/8 | 12.75 | 11.25 | 150 | 7.50 |
| Do | Nov. 7, 1913 | L. M. blue | 7/8, 1 1/16 | 12.50 | 10.00 | 250 | 12.50 |
| Fordyce | .....do..... | M. off | 1 | 13.00 | 12.00 | 100 | 5.00 |
| Hope | Oct. 23, 1913 | M. spotted | 7/8 | 14.00 | 12.25 | 175 | 8.75 |
| Ola | Nov. 20, 1913 | M. off | 7/8 | 11.50 | 10.50 | 100 | 5.00 |

[1] In this table initials of grade names have been used.

## SUGGESTED ECONOMIES IN HANDLING AND MARKETING COTTON.

This survey, together with the Oklahoma survey of 1912–13, has developed very clearly the fact that the present system of handling and marketing cotton can be improved materially. There is in the aggregate a tremendous economic waste all along the line from the producer through to the spinner.

The farmer should be convinced of the importance of producing good staple and of care in picking and housing it. The ginner should be required to operate his gins at the right speed—approximately 400 revolutions per minute for the average run of cotton—since fully 10 per cent of the samples in this investigation were so badly ginned as to be lowered about one grade in value. Assuming that the results of this survey fairly represent the condition in the Cotton Belt, the losses for the season of 1913–14 from poor ginning alone exceeded $2,000,000.

Adequate covering for the bale is necessary to protect the lint, but excessive tare is uneconomical. H. W. Macalister, a leading member of the International Federation of Master Cotton Spinners' and Manufacturers' Association,[1] has stated that a change from the present system of selling cotton to selling on net weight would result in a saving to the producer on export cotton alone, based on 7,000,000 bales, of $12,852,000, or approximately $1.85 per bale.

Proper storage after ginning would result in a tremendous saving, as country damage assumes huge proportions. Warehouses are an economic necessity in a proper system of cotton marketing. In the years of abundant harvest the producer can store his cotton and with the warehouse receipt negotiate such loans as his needs may demand. Without the warehouse he has to market his cotton as rapidly as ginned, which results in a depression in prices incident to a glutted market, or he must subject it to country damage and other risks.

Figures obtained in the course of this study indicate that practically no premium is paid for the grades above Middling. Of the 38,000 samples collected, 9,916 bales were better than Middling, averaging 41 points above Middling in value, or $2.05 per bale. Assuming that the crop of 1913–14 graded the same as the samples in this survey, it would indicate that the producers lost that year, through a failure to secure premiums on their high grades, a sum in excess of $7,500,000.

When conditions are favorable, great economies may be effected through the organization of cooperative associations for the proper handling and marketing of cotton. Organizing on a community basis will permit the development and maintenance of a pure variety of cotton of a given length of staple. This development of one variety must be accompanied by better methods of harvesting, ginning, and storing. When the cotton is ready for marketing, better prices can be secured by assembling it at a central point, having it properly classed, and offering it for sale in even-running lots of grade and staple.

[1] U. S. Department of State. Special Consular Reports on Cotton Tare. 1912. See page 24.

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